

The Triangle Inequality Theorem

Date _____ Period _____

State if the three numbers can be the measures of the sides of a triangle.

1) 7, 5, 4

2) 3, 6, 2

3) 5, 2, 4

4) 8, 2, 8

5) 9, 6, 5

6) 5, 8, 4

7) 4, 7, 8

8) 11, 12, 9

9) 3, 10, 8

10) 1, 13, 13

11) 2, 15, 16

12) 10, 18, 10

Two sides of a triangle have the following measures. Find the range of possible measures for the third side.

13) 9, 5

14) 5, 8

15) 6, 10

16) 6, 9

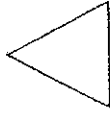
17) 11, 8

18) 14, 11

71. If you have a gift box like the one shown below, which shape cross-section would be impossible to get?



A.



B.



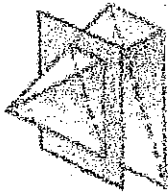
C.



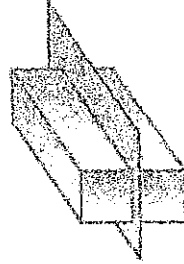
D.



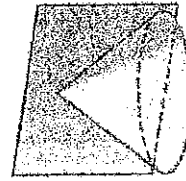
68. Describe the shape resulting from the cross-section of the following figure.



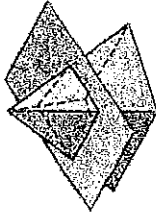
79. Describe the shape resulting from the cross-section of the following figure.



88. Describe the shape resulting from the cross-section of the following figure.



3. Describe or draw the cross-section shape resulting from cutting the figure below.

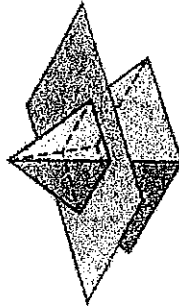


4. Describe or draw the cross-section shape resulting from cutting the cone of an ice-cream cone vertically.

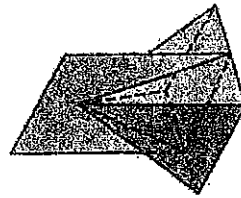
5. Describe or draw the cross-section shape resulting from cutting the cone of an ice-cream cone horizontally.

Explain or draw the two-dimensional shapes of the cross-sections of each of the three-dimensional shapes after they have been sliced.

1. Describe or draw the cross-section shape resulting from cutting the figure below.

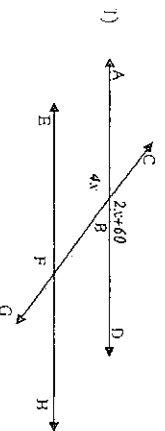


2. Describe or draw the cross-section shape resulting from cutting the figure below.



FINDING UNKNOWN ANGLE MEASURES – CONGRUENT ANGLES #3

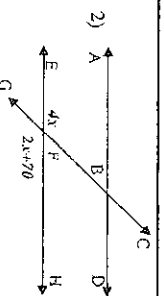
Directions: Find the measure of each missing angle in the parallel lines and transversals below. Each pair of angles is either *vertical angles*, *alternate angles*, or *corresponding angles*, so they are congruent. All you have to do is set p and solve an equation where the expressions are congruent. Once you've solved for x , plug that value back into each expression to find the measure of each angle.



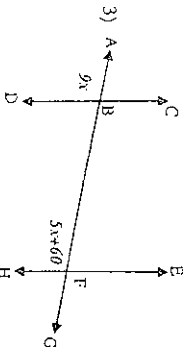
Equation: _____

$$\angle ABG = \underline{\hspace{2cm}} \quad \angle CBD = \underline{\hspace{2cm}}$$

$$x = \underline{\hspace{2cm}} \quad \angle EPB = \underline{\hspace{2cm}} \quad \angle GFH = \underline{\hspace{2cm}}$$



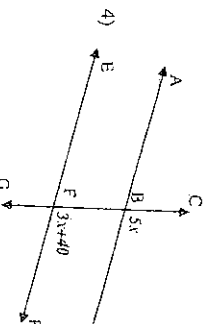
Equation: _____



Equation: _____

$$x = \underline{\hspace{2cm}} \quad \angle ABD = \underline{\hspace{2cm}} \quad \angle HFA = \underline{\hspace{2cm}}$$

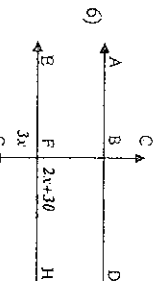
$$x = \underline{\hspace{2cm}} \quad \angle CBD = \underline{\hspace{2cm}} \quad \angle HFC = \underline{\hspace{2cm}}$$



Equation: _____

$$\angle GBD = \underline{\hspace{2cm}} \quad \angle EFC = \underline{\hspace{2cm}}$$

$$x = \underline{\hspace{2cm}} \quad \angle EFG = \underline{\hspace{2cm}} \quad \angle HFC = \underline{\hspace{2cm}}$$

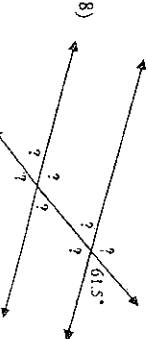
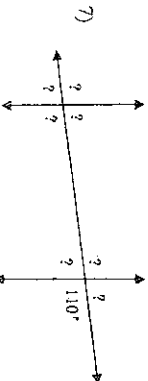
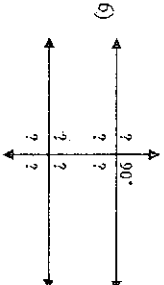
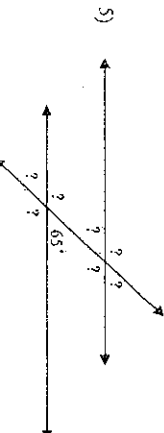
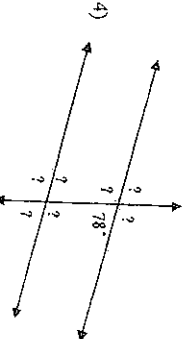
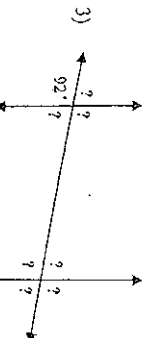
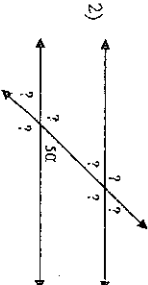
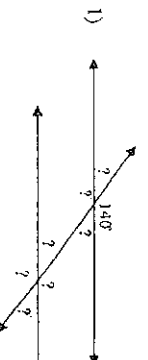
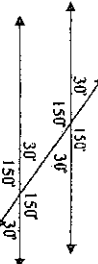


Equation: _____

FINDING UNKNOWN ANGLE MEASURES #2

Directions: For each set of parallel lines, you are given the measure of one angle. Use your knowledge of parallel lines and transversals to find the measures of each other angle.

Example: Given an angle of 150°



Name: _____ Date: _____ Period: _____

Use the figure at the right to answer problems 1-8.

Classify each pair of angles as one of the following:

(a) congruent (b) corresponding angles

(c) supplementary angles (d) vertical angles

(e) supplementary angles (f) none

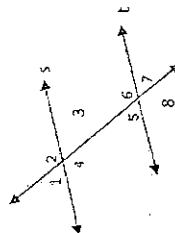
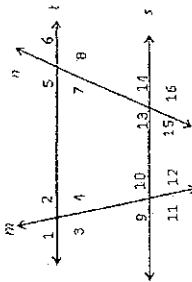
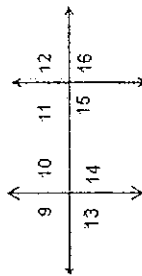
1. congruent $\angle 9$ & $\angle 16$ 5. congruent $\angle 9$ & $\angle 11$

2. congruent $\angle 15$ & $\angle 11$ 6. congruent $\angle 9$ & $\angle 15$

3. congruent $\angle 10$ & $\angle 15$ 7. congruent $\angle 13$ & $\angle 14$

4. congruent $\angle 12$ & $\angle 15$ 8. congruent $\angle 14$ & $\angle 11$

Some may be more than one.



9. $m\angle 2 = 97^\circ$ $m\angle 6 = 83^\circ$

$m\angle 3 =$ _____ $m\angle 5 =$ _____

$m\angle 10 =$ _____ $m\angle 7 =$ _____

$m\angle 9 =$ _____ $m\angle 16 =$ _____

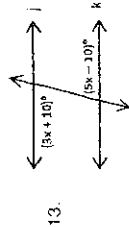
Find the value of x given that s // t

10. $m\angle 4 = 77^\circ$, $m\angle 8 = 4x + 57$

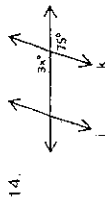
11. $m\angle 3 = 5x + 13$, $m\angle 5 = 53^\circ$

12. $m\angle 1 = 6x - 5$, $m\angle 7 = 115^\circ$

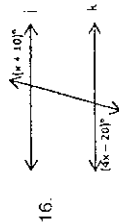
Find the value of x that makes j // k.



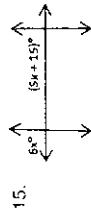
13.



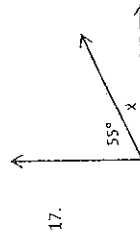
14.



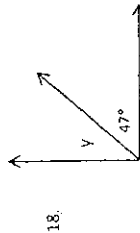
16.



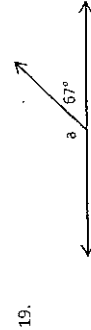
15.



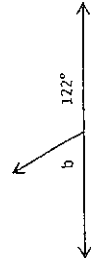
17.



18.



19.



20.